

February 27, 2003

## Abraham Announces Pollution-Free Power Plant of the Future

### \$1 Billion 'Living Prototype' to Showcase Cutting-Edge Technologies to Advance President's Climate Change, Hydrogen Initiatives

Washington DC - Secretary of Energy Spencer Abraham today announced plans for the United States to build a prototype of the fossil fuel power plant of the future – a \$1 billion venture that will combine electricity and hydrogen production with the virtual total elimination of harmful emissions, including greenhouse gases.

"FutureGen will be one of the boldest steps our nation has taken toward a pollution-free energy future," said Secretary Abraham. "Knowledge from FutureGen will help turn coal from an environmentally challenging energy resource into an environmentally benign one. The prototype power plant will serve as the test bed for demonstrating the best technologies the world has to offer."

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#### President Endorses FutureGen

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The Energy Department will ask the power industry to organize a consortium to manage the project and provide at least 20 percent of the costs.

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Although current plans call for the plant to be designed and built over the next five years, then operated for at least five years beyond that, the department envisions the project serving as a test bed for new technologies for well into the coming decade and perhaps beyond.

Virtually every aspect of the prototype plant will be based on cutting-edge technology. The government will ask the industrial consortium to design a plant that will turn coal into a hydrogen-rich gas, rather than burning it directly. The hydrogen could then be combusted in a turbine or used in a fuel cell to produce clean electricity, or it could be fed to a refinery to help upgrade petroleum products. In the future, the plant could become a model hydrogen-production facility for President Bush's initiative to develop a new fleet of hydrogen-powered cars and trucks.

Common air pollutants such as sulfur dioxide and nitrogen oxides would be cleaned from the coal gases and converted to useable byproducts such as fertilizers and soil enhancers. Mercury pollutants would also be removed. Carbon dioxide would be captured and sequestered in deep underground geologic formations.

Carbon sequestration will be one of the primary features that will set the prototype plant apart from other electric power projects. Engineers will design into the plant advanced capabilities to capture the carbon dioxide in a form that can be sequestered. No other plant in the world has been built with this capability.

The initial goal will be to capture at least 90 percent of the plant's carbon dioxide, but with advanced technologies, it may be possible to achieve nearly 100 percent capture.

Once captured, the carbon dioxide will be injected deep underground, perhaps into the brackish reservoirs that lie thousands of feet below the surface of much of the United States, or potentially into oil or gas reservoirs, or into unmineable coal seams or basalt formations. Once entrapped in these formations, the greenhouse gas would be

permanently isolated from the atmosphere.

The plant would be sized to generate approximately 275 megawatts of electricity, roughly equivalent to an average mid-size coal-fired power plant.

Finally, the department said, the prototype plant would be a stepping stone toward a future coal-fired power plant that not only would be emission-free but would operate at unprecedented fuel efficiencies. Technologies that could be future candidates for testing at the prototype plant could push electric power generating efficiencies to 60 percent or more – nearly double the efficiencies of today's conventional coal-burning plants.

Coal is the workhorse of the United States' electric power sector, supplying more than half the electricity the nation consumes. It is also the most abundant fossil fuel in the United States with supplies projected to last 250 years or more. The ultimate goal for the prototype plant, the Energy Department said, is to show how new technology can eliminate environmental concerns over the future use of coal and allow the nation to tap the full potential of its massive coal deposits.

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